

ACCESSION NR: AP4010572

S/0050/64/000/001/0003/0007

AUTHOR: Khrgian, A. Kh.

TITLE: International year of the quiet sun

SOURCE: Meteorologiya i gidrologiya, no. 1, 1964, 3-7

TOPIC TAGS: International Geophysical Year, solar activity, atmospheric phenomena, meteorology, artificial satellite, cloud, upper atmosphere, electron flux, meteor trail

ABSTRACT: One problem of the International Geophysical Year, only partially solved, has been the relationship between atmospheric phenomena and solar activity. During the International Geophysical Year, geophysicists of many specialties have investigated many aspects of this problem: inhomogeneities of the ionosphere and of meteors, the so-called whistlers in the atmosphere, contributions of artificial satellites, and many others. The International Year of the Quiet Sun was set up at the session of the IGY in 1960 in Helsinki, where a working group was chosen to arrange a preliminary program. The idea of this program was supported by the International Council of Scientific Societies (September 1961) and by UNESCO (March 1962). A committee for the organization was selected and a pro-

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gram was outlined for the period from 1 April 1964 to 31 December 1965 (and then extended to all of 1964-65). A meteorological program has been formulated to make observations on the total quantity of ozone and its vertical distribution, the radiation flux at all heights within the atmosphere and beyond, and the temperature, pressure, and movements of the atmosphere, especially at levels above 100 millibars. When possible, observations will also be made on the vertical distribution of water vapor in the upper atmosphere, on clouds of the upper atmosphere, on distribution of electron flux in layers, on meteor trails as indicators of atmospheric movements, and on the structure of the illumination of the sky. The USSR is setting up networks for pertinent observation of all these features, in addition to related studies on artificial satellites, fluctuations in the magnetic field, ionization in the aurora, and the related phenomena.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: 00

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: AS

NO REF SOV: 000

OTHER: 000

Card 2/2

KHRGIAN, A.Kh.

Atmospheric ozone; some results of work done in the
International Geophysical Year. Meteor. i gidrol. no.1:
41-53 Ja '64. (MIRA 17:3)

1. Moskovskiy gosudarstvennyy universitet.

KHRGIAN, A.Kh., doktor geograf.nauk, prof.

13th General Assembly of the International Union of Geodesy
and Geophysics in Berkeley (U.S.A.). Meteor. i gidrol. no. 2:
49-53 F '64. (MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet.

KHROGIAN, A.Kh., prof.

Atmospheric ozone. Meteor. i gidrol. no.10:60 0 '64.

(MIRA 17:10)

KHRGIAN, A.Kh.

Characteristics of the distribution and variation of atmospheric
ozone according to IGY data. Geofiz. biul. no.14:26-38 '64.
(MIRA 18:4)

ACCESSION NR: AT4046028

S/2789/64/000/055/0054/0059

AUTHOR: Burkovskaya, S. N.; Khrgian, A. Kh.

TITLE: A case of observation of high cirrus clouds

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy*, no. 55, 1964.
Voprosy*, fiziki oblakov (Problems of cloud physics), 54-59

TOPIC TAGS: meteorology, cloud, cirrus cloud, jet stream, tropopause, cloud physics

ABSTRACT: This report discusses the single instance of observation of cirrus clouds of an unusual structure on 22 July 1961 in the Crimea. Much of the article is a detailed description of the synoptic situation prevailing on that day over the Crimea, Black Sea, Ukraine, Turkey and adjacent regions. Fig. 1 of the Enclosure is a vertical cross section of the atmosphere constructed for 1500 hours (3:00 P.M.) on 22 July along a line extending from Odessa to Yerevan. The cloud field over the observation point in the Crimea is also described in detail. The text is accompanied by a low-quality photograph of the described cirrus clouds. These clouds were at a height as great as 15-17.5 km, appreciably exceeding their usual height of 9-11 km. The following possible explanation is presented. It is

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probable that the observed Ci were formed above the surface of a front, between it and the tropopause, at a height of 15-17 km, 900 km to the north of the surface line of the front. The frontal surface, beginning at the earth's surface over the southern part of Turkey, then rose farther north in such a way that traces of it could be seen on the cross section over Tbilisi at a height of about 6 km. To the northwest it rose still higher. There were no frontal clouds except the described Ci; over Turkey and the Black Sea there were no clouds at all, apparently due to the very great dryness of the upper tropical air. The band of cirrus clouds over the Crimea was relatively narrow; it was situated parallel to the front. They were probably at heights of 14-17 km on the northern edge of a jet stream (and considerably above it). The rate of movement of the cirrus clouds was considerably less than the velocity of the jet stream. No generalizations can be made on the basis of this single occurrence, but it is shown that thin cirrus can be formed under the tropical tropopause at a considerable height, far greater than ordinary Ci. It is surmised that such clouds are observed for the most part in subtropical zones. Orig. art. has: 2 figures.

ASSOCIATION: Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory)

SUBMITTED: 00

ENCL: 02

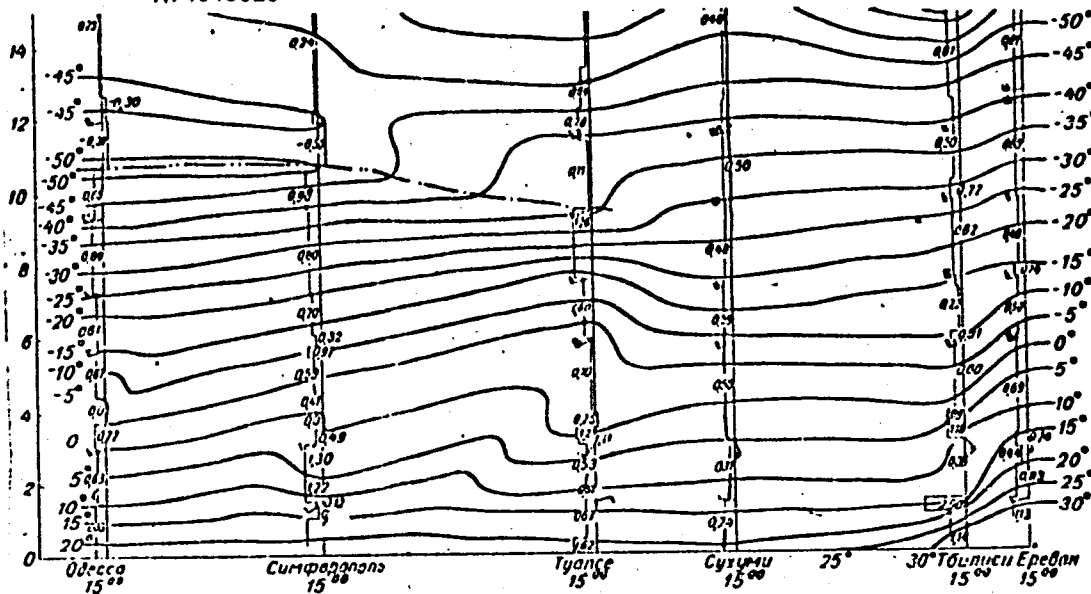
SUB CODE: ES

Card 2/4 NO REF SOV: 004

OTHER: 000

ACCESSION NR: AT4046028

ENCLOSURE: 01



Card 3/4

Fig. 1.

ACCESSION NR: AT4046028

ENCLOSURE: 02

Legend to Figure 1: Vertical cross section of the atmosphere on the basis
of data for 1500 hours on 22 July 1961 along the line Odessa-Yerevan.
A - Odessa; B - Simferopol'; C - Tuapse; D - Sukhumi; E - Tbilisi; F - Yerevan.

Card: 4/4

KHRGIAN, A.Kh.; KUZNETSOV, G.I.; KONDRAT'YEVA, A.V.; NASILOV,
D.I., otv. red.; VERSTAK, G.V., red.

[Collection of articles] Sbornik statei. Moskva,
Nauka. No.8. 1965. 89 p. (MIRA 18:3)

1. Akademiya nauk SSSR. Mezhdueomstvennyy neofizicheskiy
komitet. II razdel programmy MGG. Meteorologiya.

L 52768-65 EWG(j)/EWT(1)/EWT(m)/EPF(c)/FCC/EPR/EMP(t)/EMP(b)/EWA(h) Pg-4/
Pq-4/Pr-4/Ps-4/Pae-2/Pt-7/Peb/Pi-4 IJP(c) JB/GW

ACCESSION NR: AT5009971

UR/3010/65/000/014/0026/0038

AUTHOR: Khrgian, A. Kh. (Doctor of geographical sciences) 52/311

TITLE: Basic features of the distribution and variation of atmospheric ozone from the data of the IGY

SOURCE: AN SSSR. Mezhdovedomstvennyy geofizicheskiy komitet. Geofizicheskiy byulleten', no. 14, 1965, 26-38

TOPIC TAGS: IGY ^{v7}ozone survey, atmospheric ozone distribution, ^{v8}ozone concentration variation, atmospheric circulation

ABSTRACT: Most IGY data concerning ozone concentrations from 50 stations in the northern and 11 stations in the southern hemisphere were collected by a modified Dobson spectrophotometer. On the basis of these data, the author discusses in detail the magnitude of the deviations from the average yearly ozone concentration, the geographical distribution of ozone according to latitude, the yearly course of variations in ozone concentration, the ozone concentration extremes, the so-called continental effect (G. I. Kuznetsov, Ozon i obshchaya tsirkulyatsiya atmosfery M., 1961, p. 82), relationship between ozone concentrations and the general circulation of the atmosphere, and the secular course of ozone concentration (all old data are given in new units). The mean

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ACCESSION NR: AT5009971

0

distribution according to latitude and time of year is shown in Figure 1 of the Enclosure.
Orig. art. has: 3 figures and 8 tables.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 01

SUB CODE: ES

NO REF SOV: 007

OTHER: 006

Card 2/3

KHRGIAN, A.Kh.

Studies on atmospheric ozone. Geofiz. biul. no.15:64-67 '65.
(MIRA 18:11)

KHRGIAN, A.Kh.

Some properties of low stratiform clouds. Trudy TSAO no.64:11-27 '65
(MIRA 18:7)

MEDUNIN, A.Ye.; KHROIAN, A.Mh.

Studies on the theory of the figure of the earth conducted in
Russia. Ist. i metod. est. nauk no.3:175-191 '65.

(MIRA 18:12)

ZYUKOV, P.I.; KHIRGIAN, A.Kh.

B.B. Golitsyn as a physicist. Ist. i metod. est. nauk
no. 3:242-254 '65. (MIRA 18:12)

L 52724-65 EWT(1)/FCC CW
ACCESSION NR: AP5013177

UR/0362/65/001/004/0395/0401

AUTHOR: Khrgian, A. Kh.

10
8
B

TITLE: Atmospheric humidity distribution over mountainous regions

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 1, no. 4, 1965, 395-401.

TOPIC TAGS: atmospheric humidity, humidity profile, mountain climate, aerological sounding

ABSTRACT: J. Hann (Lehrbuch der Meteorologie v. 1, 1923) was the first to note that humidity decreases with altitude much more slowly over mountainous regions than over the surrounding plains. The present paper summarizes long-term summer observations at meteorological stations in the Central Caucasus and the results of aerological cross-sectional studies made by means of radiosondes which show an excess of atmospheric water-vapor pressure there in comparison with the situation at identical altitudes over the adjacent plains. The excess may amount to 2-3 mb, and the layer of increased humidity above moun-

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ACCESSION NR: AP5013177

2

tainous regions extends up to 4—5 km above sea level. This increased humidity is apparently due to increased evaporation from forests, meadows, and snow-ice surfaces. It generates, in turn, other peculiarities in the mountain climate, particularly an increase in temperature in the free atmosphere above the mountains. Future investigations should be made of the excess humidity over different regions and during other seasons of the year. "The author thanks V. P. Lominadze for supplying data and information related to aerological conditions over the Caucasus." Orig. art. has: 5 tables. [08]

ASSOCIATION: Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory)

SUBMITTED: 05Oct64 ENCL: 00 SUB CODE: ES
NO REF SOV: 007 OTHER: 002 ATD PRESS: 4011

282
Card 2/2

L 63791-65 EWT(1)/FCC G#
ACCESSION NR: AP5019430

UR/0020/65/163/003/0631/0633

14
12
B

AUTHOR: Lominadze, V. P.; Khrgian, A. Kh.

TITLE: Effect of mountain elevations on atmospheric humidity

SOURCE: AN SSSR. Doklady, v. 163, no. 3, 1965, 631-633

TOPIC TAGS: atmospheric humidity, relative humidity, absolute humidity

ABSTRACT: Mountain elevations and mountainous regions have a considerable effect on the structure and properties of the atmosphere above them. In particular, the relative and absolute humidity increase: in the atmosphere over mountains, the humidity is higher than in the atmosphere over neighboring flatlands situated at the same altitude. Data on the vapor pressure over Mineral'nyye Vody and Tbilisi, located in the Central Caucasus at a distance of 200 km from each other, were compared for the summer months, when the vapor pressure is highest and its variations are appreciable. The data indicate that the higher vapor pressure above mountainous regions is due to greater evaporation from the forests, meadows, snow, and ice of these regions. A consequence of the rise in humidity is a lowering of the condensation level and increase in the amount of precipitation of all types. In addition, an increased humidity causes a greater absorption of long-wave

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L 63791-65

ACCESSION NR: AP5019430

2

radiation from the sun and earth, and explains the higher air temperature above mountains. Orig. art. has: 2 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University)

55

SUBMITTED: 01Dec64

ENCL: 00

SUB CODE: ES

NO REF SOV: 003

OTHER: 001

llc

Card 2/2

1. LOMONOSOV MAT(1)/GGO GH
ACC NR: A10030089 (N) SOURCE CODE: UR/0362/66/002/008/0859/0871

AUTHOR: Kuznetsov, G. I.; Kirgian, A. Kh.

ORG: Moscow State University (Moskovskiy gosudarstvennyy universitet)

TITLE: Atmospheric ozone and its variations, connected with circulation over the Atlantic Ocean

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 8, 1966, 859-871

TOPIC TAGS: atmospheric ozone, atmospheric circulation, radiosonde, synoptic meteorology, atmospheric wind field, atmospheric pressure, air temperature, atmospheric front, stratosphere, wind gradient

ABSTRACT: The observations of the total amount of atmospheric ozone, measured on board the ship M. Lomonosov during a cruise over the tropical Atlantic in August-November 1965, are analyzed in conjunction with data of ships radiosonde measurements and meteorological observations, and with the world synoptic maps. The data consisted of 1350 observations made with a universal ozone meter (GGO no. 2) calibrated against direct sunlight. The radiosonde and radiowind observations made simultaneously with the ozone measurements gave the air temperature, the wind velocity, and the pressure. The observations showed that the ozone content varies greatly in time and space. A lower ozone content was observed in the region of the intratropical convergence of the trade winds (ozone equator). A maximum of ozone, connected with more intense photochemical processes in the stratosphere and the maximum insulation, was observed

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UDC: 551.510.534

L 10248-67

ACC NR: AP6030085 /

to the south of the ozone equator. Penetration of cold fronts farther south also increases the ozone content. This is accompanied by strong western wind propagating from the upper troposphere downward. The connection between the ozone content and the 26-month cycle and the vertical stratification of the circulation in the tropics is also discussed. The conclusions confirm that changes in temperature, pressure, and wind velocity in the upper troposphere are appreciable in the tropical region and are accompanied by strong meridional currents contributing to appreciable change of air between the hemispheres. These nonperiodic fluctuations of the circulation and air exchange cause the great variability of the ozone content. The results prove that a study of the ozone can contribute to data on the circulation in the tropical belt. The authors thank the members of MGI AN UkrSSR and Corresponding Member AN UkrSSR A. G. Kolesnikov for help in organizing the research and for supplying the materials for the aerometeorological observations. Orig. art. has: 9 figures and 2 tables.

SUB CODE: 04/ SUBM DATE: 12Mar66/ ORIG REF: 008/ OTH REF: 001

Card 2/2 ⁵¹

ACC NR: AP6033027

(N)

SOURCE CODE: UR/0050/66/000/009/0009/0016

AUTHOR: Khrgian, A. Kh. (Professor)

ORG: Moscow State University (Moskovskiy gosudarstvennyy universitet)

TITLE: Relationship between atmospheric ozone distribution and certain types of total atmospheric circulation

SOURCE: Meteorologiya i gidrologiya, no. 9, 1966, 9-16

TOPIC TAGS: atmospheric ozone, atmospheric model, atmospheric circulation

ABSTRACT: The discrepancy between the described and the experimentally determined distributions of ozone is explained by taking into consideration the circulation of air in the stratosphere—a factor neglected in previous studies. The behavior of ozone and its concentration at various locations do not coincide with theoretically calculated values based on the photosynthetic theory of its formation. Equations are derived considering the meridional circulation of air in the stratosphere, with a descending movement in polar regions and an ascending one in tropical areas. From these equations the ozone transfer is calculated; the results are illustrated by Fig. 1. The latitudinal differences in the vertical distribution and total amounts of ozone, as well as seasonal variations, are clarified with this additional information.

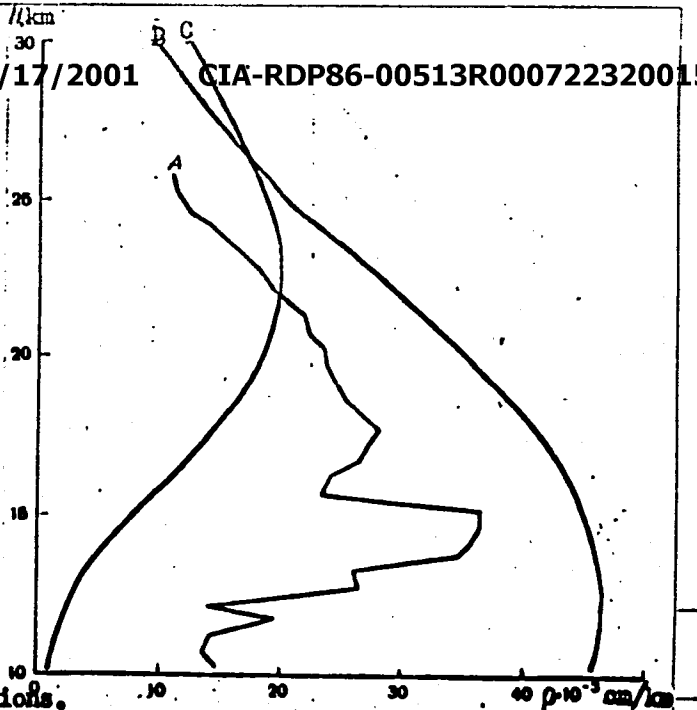
Card 1/2

UDG: 551.510.534.551.513

ACC NR: AP6033027

Fig. 1. Distribution of ozone.

A - over Tula on 27 February 1963; B - calculated for $\phi = 65$ northern latitude; C - corresponding to the photochemical equilibrium



Orig. art. has: 5 figures and 6 equations.

SUB CODE: 04/ SUBM DATE: 04Apr66/ ORIG REF: 005/ OTH REF: 001

Card 2/2

KHRGOVICH, N.

YUGOSLAVIA / Chemical Technology. Chemical Products H-5
and Their Application. Water treatment.
Sewage water

Abs Jour : Ref. Zhur. - Khimiya, No 2, 1958, No 5096

Author : Gligoriyevich J., Budimirovich M., Khrgovich N.

Inst : Not Given

Title : Effect of Ultrasound (Frequency 800 Kilohertz/
Second) on Oxidability of Drinking Water

Orig Pub : Acta veterin., 1956, No 1, 43-48

Abstract : Samples of Belgrad tap water were subjected to
the action of ultrasound (US) of frequency 800
kilohertz/second and an intensity of 0.5-1.25
watt/cm², for 3-20 minutes. It was found that

Card : 1/2

KHRGOVICH, N.

YUGOSLAVIA/Microbiology. General Microbiology.

F-1

Abs Jour: Ref. Zhur.-Biol., No 7, 1958, 28895.

Author : Gligorovich, Katich, Khrgovich.

Inst : Not given.

Title : Simultaneous Sonic Action (Frequency 800 Kc/Sec) and
Weak Solutions of "Chlorina" Disinfectant on Escherichia
Coli.

Orig Pub: Odnovremennoe deystvie ultrazvuka (chastota 800 kgts/sek)
i slabykh rastvorov dezinfektanta "khlorina" na Echerichia
coli.
Acta veterin., 1956, 6, No 3-4, 45-53.

Abstract: Ultra-sound (frequency 800 kc/sec, power 0.5 - 1 volt/cm³)
for a period of 15-20 minutes and a chlorine prepara-
tion "Chlorina" in concentration of 0.02 and 0.05%, act-
ing separately, exerted no disinfectant effect on a stand-

Card : 1/2

h Hrgovich, N.

YUGOSLAVIA / Microbiology. Microbes Pathogenic to Man F-5
and Animals. Bacteria. Bacteria of the
Intestinal Group.

Abstr Jour: Ref Zhur-Biol., No 16, 1958, 72150.

Author : Katic, R.; Puksech, I.; Jankovich, B.; Simono-
vich, S.; Hrgovich, N.; Sandur, B.

Inst : Not given.

Title : Influence of Photoclimatic Factors on the Forma-
tion of Immune Globulins in Rabbits Immunized
with *S. typhimurium*.

Orig Pub : Acta veterin., 1957, 7, No 2, 65-66.

Abstract: Two groups of rabbits were immunized with increas-
ing doses of *S. typhimurium*; the first group was
kept in darkness, the second in daylight. By
means of electrophoretic analysis, great individ-
ual fluctuation was found in the content of dif-

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Abstr Jour: Ref Zhur-Biol., No 16, 1958, 72150.

Abstract: Serum fractions of globulins in the serum of the
rabbits. It was established that as a result of
immunization only the content of gamma-globulin
in the serum of the rabbits of the second group
increased significantly; the increase was in-
significant in the serum of the rabbits of the
first group. -- V. V. Vlodavets.

Card 2/8

KHRIAPCHENKOV, A., inzhener.

Feeding of water-tube boilers with a chemically pure condensate. Mor.1 rech.
flot 13 no.2:16-18 Je '53. (MLB 6:8)

(Feed water purification)

KHIRICHENKO, Ye. P.

Cand Tech Sci

Dissertation: "Investigation of the Inaccuracy
in Machining Propeller Blades on the Copying
Machines of Special Type."

26/6/50

All-Union Correspondence Polytechnical Inst

SO Vecheryaya Moskva
Sum 71

25(1)

PHASE I BOOK EXPLOITATION

SOV/1135

Khrichenko, Yevgeniy Prokof'yevich and Nevzorov, Aleksandr Ivanovich,
Candidates of Technical Sciences

Povysheniye tochnosti obrabotki kopirovaniyem pera lopasti vozdušnogo
vinta (The Use of Copying Techniques for Increasing the Accuracy
With Which the Aerodynamic Profiles of Aircraft Propeller Blades
Can Be Machined) Moscow, Oborongiz, 1957. 44 p. (Series: Moscow.
Aviatsionnyy institut im. Sergo Ordzhonikidze, Trudy, vyp. 96)
2,140 copies printed.

Ed.: Zdanyukevich, A.K.; Ed. of Publishing House: Loseva, G.F.;
Tech. Ed.: Pukhlikova, N.A.; Managing Ed.: Zaymovskaya, A.S.,
Engineer.

PURPOSE: This book may be useful to engineers, technicians, scienti-
fic personnel, and students interested in the manufacture of air-
craft-propeller blades.

COVERAGE: The book considers the construction of duralumin aircraft-
propeller blades and technological methods used in the fabrication
of such blades. The authors discuss the kinematic configuration
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The Use of Copying Techniques (Cont.)

SOV/1135

and the principles of operation of milling machines for duplicating propeller-blade profiles and consider a number of problems involved in setting up and adjusting such machines. A detailed discussion is given of the origin of various types of machining errors and suggestions are made for minimizing them. There are 22 figures and 6 Soviet references.

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2. Technology of manufacture of duralumin blades	11
3. Kinematic configuration and operation of a special copying machine	14
4. Setting up a duplicating-type milling machine for preparing the master template	16
5. Measurements conducted on the actual production equipment	24
6. Displacement of the medium sections to compensate for the thicknesses of the roller and milling cutter when they are fixed to the spindles of the machine in different ways	24

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The Use of Copying Techniques (Cont.)

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| 7. Displacement of the lines to be copied on the blade and on the master template | 26 |
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AVAILABLE: Library of Congress

IS/sfm
3-9-59

Card 3/3

KHRICHIKOV, V. K.

124-58-9-10559

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 159 (USSR)

AUTHORS: Panovko, Ya. G. , Gol'tsev, D. I. , Danilevskiy, V. V. , Kolesnichenko, V. O. , Khrichikov, V. K.

TITLE: On Estimates of the Strength of Press Fittings (Ob otsenkakh prochnosti pressovykh soyedineniy)

PERIODICAL: Izv. AN LatvSSR, 1953, Nr 12, pp 103-110

ABSTRACT: An examination of the problem of estimating the strength of press fittings relative to the attachment of wheels to axles for railroad rolling stock. It is shown that in order to obtain an estimate of the strength of a press fitting it is not sufficient to have only a press-fitting diagram (i. e. , the relationship between the fitting force and the relative displacement of the axle against the hub). The authors offer new recommendations relative to the estimation of the strength of press fittings and arrange them in two groups: estimates regarding static conditions and estimates in which dynamic loads are taken into account. In examining the first group of estimates the authors recommend that not only the force required to make a press fit be taken into account, but also the ratio of the force required to pull the hub off the axle as

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124-58-9-10559

On Estimates of the Strength of Press Fittings

against the force required to make the press fit. They also propose that standardization be applied not to the force required to make the press fit, but to the effective negative allowance (after removal of any existing crests or burrs). Relative to the second group of estimates the authors denote the inadequacy of investigations available, and they point out that investigations performed to date fail to reflect realistic operating conditions of press-fitted pairs. They propose an equipment for dynamic testing whereby concurrent longitudinal and transverse loads could be taken into account. The authors indicate also that a "wear" curve is indispensable, and that a "wear limit" for press fitted joints should be established on that curve. The list of literature references does not fully reflect the state of the art.

1. Railway ear wheels--Attachment 2. Mechanics--Theory N. D. Tarabasov

Card 2/2

BEZBORODOV, Ivan Yosipovich; KHRICHOV, A.S., inzh., spets.red.; LYALYUK,
I.P., red.; LIMANOVA, ~~M.I.~~, tekhn.red.

[My experience in machining on lathes] Mii dosvid roboty na
tokarnomu verstati. Kharkiv, Kharkivs'ke knyzhkove vyd-vo, 1959.
71 p. (MIRA 12:12)

1. Tokar-instrumental'nik kharkivs'kogo zavodu "Serp i molot" (for
Bezborodov).
(Turning--Technological innovations)

ARTYUGIN, I.M.; GRACHEV, Yu.P.; DAVYDOV, L.N.; DOYNIKOV, Ya.P.; KIRPICHEV, V.I.; LEVENTAL', G.B.; MELENT'YEV, L.A.; MICHURIN, K.I.; NIKONOV, A.P.; SASHONKO, G.I.; STARIKOV, V.G.; FROLOV, V.I.; KHRILEV, L.S.; RABINOVICH, A.L., red.; SOBOLEVA, Ye.M., tekhn. red.

[Technical and economic principles of the expansion of heat supply engineering in power systems] Tekhniko-ekonomicheskie osnovy razvitiia teplofikatsii v energosistemakh. Moskva, Gos. energ. izd-vo, 1961. 318 p. (MIRA 15:3)
(Heat engineering) (Electric power plants)

KUZNETSOV, Yu.A.; MAKAROV, A.A.; MELENT'YEV, L.A.; MERENKOV, A.P.; NEKRASOV, A.S.; TSVETKOV, N.I.; KUZNETSOV, Yu.A.; MAKAROVA, A.S.; KARPOV, V.G.; MANSUROV, Yu.V.; SYROV, Yu.P.; KHRILEV, L.S.; TSVETKOVA, L.A.; VOYTSEKHOVSKAYA, G.V.; YEFIMOV, N.T.; LEVENTAL', G.B.; KHANAYEV, V.A.; BELYAYEV, L.S.; GAMM, A.Z.; KARTELEV, B.G.; KRUMM, L.A.; LIOPO, T.N.; SVIRKUNOV, N.N.; DRUZHININ, I.P.; KONOVALENKO, Z.P.; KHAM'YANOVA, N.V.; SHVARTSBERG, A.I.; NIKONOV, A.P.; STARIKOV, L.A.; POPYRIN, L.S.; PSHENICHNOV, N.N.; TROSHINA, G.M.; CHEL'TSOV, M.B.; SVETLOV, K.S.; SUMAROKOV, S.V.; TAKAYSHVILI, M.K.; TOLMACHEVA, N.I.; KHASILEV, V.Ya.; KOSHELEV, A.A.; KUDINOVA, L.I., red.

[Methods for using electronic computers in the optimization of power engineering calculations] Metody primeneniia elektronno-vychislitel'nykh mashin pri optimizatsii energeticheskikh raschetov. Moskva, Nauka, 1964. 318 p.

(MIRA 17:11)

1. Akademiya nauk SSSR. Sibirskoye otdeleniye. Energeticheskii institut. 2. Chlen-korrespondent AN SSSR (for Melent'yev).

L 53682-65 EWT(1)/FCC GW

ACCESSION NR: AP5012341 UR/0288/65/000/001/0104/0113

11
10
8

AUTHOR: Khrilev, L.S.; Ivanov, O.A.

TITLE: Statistical analysis of temperature variations in the outside air by electronic computers

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya tekhnicheskikh nauk, no. 1, 1965, 104-113

TOPIC TAGS: temperature variation analysis, air temperature analysis, computer program, atmospheric temperature, statistical analysis, numerical forecasting

ABSTRACT: At the present stage of the technology of heat- and fuel-supply, studies of the temperature variations in the outside air, which are reflected in fluctuations in heat and fuel demands, become a practical necessity. However, with the exception of the article by M. A. Basov (Dokl. AN SSSR, 1950, v. 72, no. 4), no one has tried to develop methods for the long-range estimation of outside air-temperature fluctuations. The present study attempts to close this gap by basing the temperature variation analysis on the theory of probability and utilizing the calculating abilities of an electronic computer. The paper (1) proves the applicability of the methods of mathematical statistics to the above-mentioned analysis; (2) establishes the probability distribution for particular temperatures of

Card 1/2

L 53682-65

ACCESSION NR: AP5012341

the outside air over long periods of time; (3) develops algorithms and programs for the computer evaluation of the probable temperature changes during the course of a year; and (4) presents temperature repetition calculations for various cities of the Soviet Union.

The authors believe that the approach may be used for the determination of the production capabilities of various heat-supplying systems within the Soviet Union, the determination of possible changes in the existing power of heat-producing electrical power plants, the choice of proper air temperatures for new gas-turbine power plants, the determination of probable heating-fuel consumption, the determination of needed fuel storage capacities, etc.. Orig. art. has: 15 formulas and 4 figures.

ASSOCIATION: Sibirskiy energeticheskiy institut Sibirskogo otdeleniya AN SSSR, Irkutsk (Siberian Power Institute, Siberian Division, AN SSSR)

SUBMITTED: 17Apr64

ENCL: 00

SUB CODE: ES, DP

NO REF SOV: 007

OTHER: 000

BAB

Card

2/2

L 41493-65

ACCESSION NR: AP5004058

S/0096/65/000/002/0024/0029

AUTHORS: Levental', G. B. (Candidate of technical sciences); Khrilev, L. S. ²
(Candidate of technical sciences); Ivanov, O. A. (Engineer) ^B

TITLE: A sample computer calculation of the external air temperatures for gas turbine installations

SOURCE: Teploenergetika, no. 2, 1965, 24-29

TOPIC TAGS: gas turbine installation, computer, probability, binomial distribution/ BESM 2 computer

ABSTRACT: A method for determining the relation between the rated available power of a gas turbine and the change in the external air temperature is described. On the basis of probabilistic analyses of the fluctuations in the external temperatures, corresponding to the different climatic conditions, recommendations are given for the choice of the proper temperature for gas turbine designs. A binomial distribution was used for the fluctuations. For the numerical calculations a

given for the choice of the proper temperature for gas turbine designs. A binomial distribution was used for the fluctuations. For the numerical calculations, a BESM-2 computer was used. The mean air temperatures used in these calculations were 50-year averages of the local temperatures at Irkutsk, Kiev, Leningrad,

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L 41493-65

ACCESSION NR: AP5004058

Moscow, and Sverdlovsk. The electrical energy was expressed in the form,

$$E_{gt} = N_{nom} h_{gt}$$

where h is the time of operation (less than 2000 hours), and N_{nom} is the nominal power. The optimum value of the temperature was taken as the temperature corresponding to the minimum calculated cost given by

$$Z_i = \frac{S_i + \sigma_n K_i}{N_{nom}},$$

where σ_n is the standard efficiency of the turbine, K_i the capital cost, and S_i the annual operation cost. It was found that, depending upon the number of hours of operation, the nominal power can be increased by 10-25% by proper design. The optimum design values recommended for the cities of Kiev, Moscow, and Sverdlovsk are respectively: +50, -50, and -100 for $h_{gt} = 500$ hours, and 100, +5-100, and 0-50 for $h_{gt} = 2000$ hrs. Orig. art. has: 19 formulas, 5 figures, and 2 tables.

ASSOCIATION OF SCIENTISTS AND ENGINEERS OF THE USSR (Academy of Sciences of the USSR Institute SO AN SSSR)

Card 2/3

L 41493-65

ACCESSION NR: AP5004058

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SUBMITTED: 00

ENCL: 00

SUB CODE: PR

NO REF SOV: 005

OTHER: 001

me
Card 3/3

KHRILEV, I.S.

Use of probability theory for determining gas consumption.
Guz. prom. 9 no.12:27-30 '64. (MIRA 18:3)

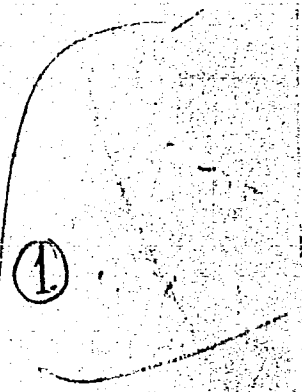
KHRILEV, L.S., kand. tekhn. nauk

Methodology for determining guaranteed power of turbogenerators
with counterpressure and heating load. Elek. sta. 36 no.1:36-43
Ja '65. (MIRA 18:3)

KHRIMLYAN, A. I.

MD

Some data on new ethereal oils for the food industries;
A. Khrimlyan and S. A. Minasyan. *Invest. Akad. Nauk
Armen. S.S.R., Biol. i Sel'skokhoz. Nauki* 8, No. 11, 131-4
(1965) (in Russian, Armenian summary 134-5).—Ethereal
oils were extd. from 6 different varieties of mint, erigaron
(Canadian), geranium, Artemisia, summer savory, and
lavender collected at the time of flowering. Thirteen ethe-
real oils were obtained: linakool (coriandro), sweet linakool,
balsam, menthol, erigaron, cat menthol, geranium, nig-
matic Artemisia, regular Artemisia, thyme, savory, and
lavender. These oils were fed to mice in increasing doses
with no ill effect. Some of these oils were then used in
liqueurs and they were highly praised and are to be used in
alc. drinks. J. S. Jaffe



USSR/Cultivated Plants - Medicinal. Essential Oils. Toxins.

M-8

Abs Jour : Ref Zhur - Biol., No 7, 1958, 30119

Author : Khrinlyan, A.I.

Inst :

Title : Essential Oils of Several Chemical Groups in Wild Mint in the Armenian SSR.

Orig Pub : Byul. Botan. sada AN ArmSSR, 1957, No 16, 107-109. (res. Arm.)

Abstract : New forms of mint oil are described which were developed from the green mass of four chemical groups in wild mint, the *Mentha longifolia* (L.) Huds., collected in the Armenian SSR, in the rayon of the city of Goris, during flowering and the beginning of fruit bearing. The determinations of the physico-chemical constants of volatile oils are listed in a table. The valuable indices for the four essential oils studied are: high menthol content, a high ester number and especially an ester number after saponification.

Card 1/1

- 57 -

KHRIMLYAN, A.I.

Essential oils in new chemoraces of wild mint in the Armenian
S.S.R. Izv.AN Arm.SSR.Biol.nauki 12 no.2:83-86 F '59.
(MIRA 12:9)

1. Botanicheskiy institut Akademii nauk ArmSSR.
(ARMENIA--MINT (BOTANY)) (ESSENCES AND ESSENTIAL OILS)

ASTVATSATRYAN, G.Ya.; KHRIMLYAN, A.I.

Raising mesembryanthemum in the Erivan Botanical Garden.
Biul. Glav. bot. sada no.53:39-44 '64. (MIRA 17:6)

1. Botanicheskiy sad Akademii nauk Armyanskoy SSR, g.
Yerevan.

GALACH'YAN, R.M.; KHRIMLYAN, A.I....

Phytoncidal action of essential oils of the mint on phytopathogenic bacteria. Vop. mikrobiol. no.2:233-247 '64.

Phytoncidal action of essential oils from the flora of Armenia on phytopathogenic bacteria. Ibid.:249-260

MIRA 18:3)

KHROMLEYAN, A.I.

Photoperiodism of the horse mint *Mentha longifolia* (L.) Huds. and
some of its chemical races. Izv. AN Arm. SSR. Biol. nauki 18 no.7:
33-38 Ji '65. (MIRA 18:8)

1. Botanicheskiy institut i sad AN ArmSSR.

K. K. K. K. K.

KURASHOV, S.V.; KARYNBAYEV, S.R.; SHUPIK, P.L.; DISKALENKO, A.P.; MAMANTAVRISHVILI, D.G.; KRAUSS, A.A.; DANILOV, Yu.Ye.; SAGATOV, R.S.; PEN'KOVSKIY, B.R.; NEPESOV, D.N.; INSAROV, I.A.; AKHUNDOV, V.Yu.; KHRIMLYAN, A.I.; AKHMEDOV, K.I.; BAKULEV, A.N.; NESTEROV, A.I.; DAVYDOVSKIY, I.V.; GRASHCHENKOV, N.I.; DENISEVICH, A.Y.; KISELEV, K.V.; KRIVENKO, L.M.; MINZHASAROVA, Z.; YAKOVLEV, M.D.; KOZLOV, I.I.; POKROVSKIY, D.V.; MITNEREV, G.A.

Discussions. Sov.zdrav. 16 no.1:18-68 Ja '57.

(MLRA 10:2)

1. Ministr zdavookhraneniya RSFSR. (for Kurashov). 2. Ministr zdavookhraneniya Kazakhskoy SSR. (for Karyngayev). 3. Ministr zdavookhraneniya Ukrainskoy SSR (for Shipik). 4. Ministr zdavookhraneniya Moldavskoy SSR (for Diskalenko). 5. Ministr zdavookhraneniya Gruzinskoy SSR.(for Mamantavrishvili). 6. Ministr zdavookhraneniya Latvyskoy SSR. (for Krauss). 7. Minister zdavookhraneniya Kirgizskoy SSR (for Danilov). 8. Ministr zdavookhraneniya Uzbekskoy, SSR. (for Sagatov) 9. Ministr zdavookhraneniya Litovskoy SSR. (for Pen'kovskiy). 10. Ministr zdavookhraneniya Turkmenkoy SSR. (for Nepesov). 11. Ministr zdavookhraneniya Belorusskoy SSR. (for Insarov). 12. Ministr zdavookhraneniya Azerbaydzhanskoy SSR. (for Akhundov). 13. Ministr zdavookhraneniya Armysanskoy SSR. (for Khrimlyan). 14. Ministr zdavookhraneniya Tadzhikskoy SSR. (for Akhmedov). 15. Prezident Akademii meditsinskikh nauk SSSR. (for Bakulev). 16. Vitse-prezident Akademii meditsinskikh nauk SSSR. (for Nesterov). 17. Chlen Prezidiuma Akademii meditsinskikh nauk SSSR. (for Davydovskiy). 18. Predsedatel' Uchenogo meditsinskogo soveta Ministerstva zdavookhraneniya SSSR (for Grashchenkov)

(Continued on next card)

KURASHOY, S.V.---- (continued) Card 2.

19. Sekretar' Borisovskogo gorodskogo komiteta Kommunisticheskoy partii Belorussii. (for Denisevich). 20. Zamestitel' predsedatelya Soveta Ministrov Belorusskoy SSR (for Kiselev). 21. Zamestitel' predsedatelya Krasnodarskogo krayispolkoma (for Krivenko). 22. Zamestitel' predsedatelya Karagandinskogo oblaspolkoma. (for Minshazarova). 23. Zamestitel' predsedatelya Gosplana SSSR. (for Yakovlev). 24. Zaveduyushchiy otdelom sotsial'nogo strakhovaniya Vsesoyuznogo Tsentral'nogo Soveta professional'nykh soyuzov (for Kozlov). 25. Predsedatel' Tsentral'nogo Komiteta profsoyuza meditsinskikh rabotnikov (for Pokrovskiy). 26. Predsedatel' Ispolkoma Soyuza Obshchestv Krasnogo Kresta i Krasnogo Polumesyatsa SSSR (for Miterev)

(PUBLIC HEARIN)

TIMAKOV, V.D., otv. red.; ALEKSANYAN, A.B., prof., red.; ARUTYUNYAN, L.B.,
prof., red.; DOMBROVSKAYA, Yu.F., prof., red.; ZHUKOVSKIY, M.A.,
starshiy nauchnyy sotr., red.; KHRIMIYAN, A.I., red.; GABERLAND,
M.I., tekhn. red.

[Transactions of a session of the Academy of Medical Sciences in
Erivan, October 12-14, 1959] Trudy nauchnoi sessii Akademii meditsin-
skikh nauk SSSR v Erevane 12-14 oktiabria 1959 g. Redkollegiya: V.D.
Timakov i dr. Moskva, Medgiz, 1960. 191 p. (MIRA 15:1)

1. Akademiya meditsinskikh nauk SSSR. Moscow. 2. Vitse-prezident
Akademii meditsinskikh nauk (for Timakov). 3. Deystvitel'nyy chlen
Akademii meditsinskikh nauk (for Aleksanyan, Dombrovskaya).
(ARMENIA--PEDIATRICS)

GOFMAN, I.M. (Moskva); DMOKHOVSKIY, V.V. (Moskva); YERMOLAYEVA, Ye.V.
(Moskva); LAGUNOVA, I.G. (Moskva); KHRIMLYAN, A.I. (Moskva)

Reconstruction of a standard 18-bed radiological department
meeting the current requirements of medical technology. Trudy
TSentr. nauch.-issl. inst. rentg. i rad. 11 no.1:305-310 '64.
(MIRA 18:11)

KHRIMLYAN, A.I.

Trachoma in the Democratic Republic of Vietnam. Vop. virus.
10 no.5:515-519 S-0 '65. (MIRA 18:11)

1. 4-ye Glavnoye upravleniye pri Ministerstve zdravookhraneniya
SSSR, Moskva.

KHRIMLYAN, A.I.

Incidence of wuchereriasis, brugiasis, and clonorchiasis
in the Democratic Republic of Vietnam; a review of literature.
Med. paraz. i paraz. bol. 34 no.2:153-156 Mr-Apr '65.
(MIRA 18:11)

1. KHRIMLYAN, ARTASHES
2. USSR (600)
4. Geraniums
7. Propagation of geranium by leaf cutting with a dormant bud. *Iz. Bot. sada AN Ar m. SSR no.5, 1948*

9. Monthly list of Russian Accessions, Library of Congress, March 1953, Unclassified

1. Khrimlyan, A.
2. USSR (600)
4. ARMENIA-ESSENCES AND ESSENTIAL OILS
7. Some investigations into wild essential-oil plants of Armenia. Biul. Bot. sada An Arm. SSR no. 6, 1948

9. Monthly List of Russian Accessions. Library of Congress, March 1953 Unclassified

1. KHRIDLYAN, ARTASHES

2. USSR (600)

4. *Betony*

7. *Woolly betony* as a decorative plant. *Biul. Bot. sada AN Arm. SSR*
no.6, 1948

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified

1. KHRIMLYAN, Artashes
2. USSR (600)
4. Lemon Grass
7. First results of experiments in cultivating lemon grass [*Cymbopogon citratus* Stapf.]. 7. *Byl.Bot.sada AN Arm. SSR* no. 6, 1948

Monthly Lists of Russian Accessions, Library of Congress, March, 1953, Unclassified.

1. KHRIMLYAN, Artashes
2. USSR (600)
4. Essences and Essential Oils
7. Yield of essential oil from parts of the plant *Frangos ferulacea* (L) Lindl. Biul. Bot.sada AN Arm.SSSR no. 6, 1948.

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

KHRIMLYAN, Artashes.

First data on experiments with geraniums of high essential-oil content in the Botanical Garden of the Academy of Sciences of the Armenian S.S.R. Biul.Bot.sada [Eriv.] no.8:47-48 '49. (MLRA 9:8)
(Armenia--Geraniums)

KHRIMLYAN, A.I.

Study of essential oil plants of the Caucasus. Biol.Bot.sada [Priv.]
no.10:93-96 '50. (MLBA 9:8)

(Caucasus--Mint (Botany))

KHRIMLYAN, A.I.

Examination of a series of spots in the Georgian S.S.R. for the occurrence of bergamot thyme, horsemint (*Mentha longifolia*), and catnip. *Biul. Bot. sada* [Eriv.] no. 12:75-78 '51. (MLRA 9:8)
(Georgia--Mint (Botany))

TETEREVNIKOVA--BAHAYAN, D.N.; KHRIMLYAN, I.A.; TASLAKHCHYAN, M.G.

Some fungus diseases of trees and shrubs and ornamental plants in
the Armenian S.S.R. Izv. An Arm. SSR. Biol. nauki 17 no.2:11-20
F '64. (MIRA 17:8)

TETEREVNIKOVA-BABAYAN, D.N.; KHRIMLYAN, I.A.; TASLAKHCHYAN, M.G.

Some fungus diseases of trees and shrubs and ornamental plants
in the Armenian S.S.R. Izv. AN Arm. SSR. Biol. nauki 17 no.2:11-20
F '64. (MIRA 17:8)

SHAMIRAN, S.I.

Ayrunyan, K., Khrinlyan, S.I. and Shakhbazyan, M.A. "The economics of Arzni-Shamiram irrigation" (On the plan for agricultural reconstruction of the area), Izvestiya (Akad. nauk Arm. SSR), Oshchestv. nauki, 1948, No. 11, p. 3-32

SO: U-3261, 10 April 53, (Letopis 'zhurnal 'nykh Statey No. 12, 1949)

HIRSHYAN, S. I. and ALLAKIVERDYAN, G. G.

"The Development of Heavy Industry in the Armenian SSR,"
Yerevan, Izd-vo.
Acad. Sci. Arm. SSR, 1955

KHRIMOV SA

1957 AND 1958 (1958) PROCESSES AND PROPERTIES INDEX

108 AND 117M GROUPS

B-64 p.

The problem of the origin of the electric restoring couple in the quadrant electrometer. L. F. KHRIMOV. *C.R. Acad. Sci.*, 2, 37-40 (1957) *Ann. Oct.-Dec., 1957 in Russian.*

Maxwell's formula for the quadrant electrometer is derived assuming that the capacitance coefficients of the conductors in the electrometer are linear functions of the deflection α . However, experimental investigations have shown that the restoring couple D is not identical with the torsion couple of the thread R_0 , but depends also on the auxiliary potential V , due to electric distorting or restoring couples. The author discusses previous work and formulates a new theory, according to which the non-linear dependence of the capacitance coefficients C_{ij} on the angle α is due only to the geometrical asymmetry of the system, i.e. the oblique position of the quadrants relative to the axis of the needle. Without this asymmetry, the electrical couples cannot exist, which can be shown to be true for both heterostatic and idiostatic connections of the instrument. The experiments fully confirm the theory, and show also that certain necessary asymmetries are also due to field distortions near the gaps between the quadrants and at the edges of the needles, phenomena more important in the idiostatic than in the heterostatic connection. B. P. KRAUS.

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

1957 AND 1958 (1958) PROCESSES AND PROPERTIES INDEX

108 AND 117M GROUPS

1957 AND 1958 (1958) PROCESSES AND PROPERTIES INDEX

108 AND 117M GROUPS

KHRIMIAN, A.

USSR/Nuclear Physics - Cosmic Rays
Nuclear Physics - Mesons

Doc 47

"Mass Spectra of Varitrons," A. Alikhanyan, Corr Mem, Acad Sci USSR; A. Alikhanov, Academician; V. Morozov, G. Makhelishvili, A. Khachaturyan, Phys Inst, Acad Sci, Armenian SSR, 8 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Authors reported in previous articles that, as a result of magnetic analysis of composition of cosmic radiation at an altitude of 3,250 meters, new particles discovered which have a mass greater than the mass of the mesotron. Also presented data showing that, in cosmic radiation, there are particles with a positive and negative sign, the mass of which exceeds that of the proton. This new group of elementary particles named varitrons. Present article presents results of spectrum analysis of these new particles.

PA60T80

Khrimyan, A.
Khrimyan, A. [V.]

USSR 85089 IT-91 (Rev.)

THE MASS SPECTRUM OF VARITRONS. (Spectr Mass Varitronov). A. Alikhanian, A. Alikhanov, V. Morozov, G. Munkheltshvili, and A. Khrimian. Translated and revised by G. Belkov from "Zhur. Eksptl. i Teoret. Fiz. 18, 673-702 (1948). 54p.

A mass spectrometer consisting of a large constant magnet and several groups of counters was constructed for the analysis of the mass of particles which constitute the soft and hard components of cosmic rays. The large dispersion of the spectrometer made it possible to establish that the mass spectrum of varitrons consisted of individual discrete lines. It was established that at 3250m above sea level there are present in cosmic rays more than 12 varieties of varitrons of different mass and having both positive and negative charges. The mass of a varitron varies from 10 to 25,000 electron masses. Simultaneously it was shown that varitrons are also a constituent of the hard component of cosmic rays. An analysis of the spectrum of the momenta.

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of the hard component showed that the varitrons, recorded by a spectrometer, arise as a result of the decomposition of heavier varitrons stopped in the air. The presence of fast protons in cosmic rays was proven by direct measurements. From the determination of the positive excess in the spectrum of the hard component it is possible to conclude that the quantity of fast protons in cosmic rays constitutes not less than 7% of the total intensity. (auth)

... ..

KHACHATRYAN, A. V.

USSR/Nuclear Physics - Cosmic Radiation
Nuclear Physics - Particles, Charged - Trajectories

Jul 48

"Spectrum of Varitron Masses, II," A. I. Alikhayan, Corr Mem, Acad Sci USSR, Acad
A. I. Alikhanov, V. M. Morozov, A. V. Khrimyan, Phys Inst, Acad Sci Armenian SSR,
and Inst Phys Problems, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXI, No 1

Part I appeared in "Dok Ak Nauk SSSR" Vol LXVIII, No 7. Present paper gives more
exact data obtained by processing supplementary series of readings, and by processing
the trajectory of particles with a penetration of over 5.6 cm Pb (of the "hard"
component). Submitted 18 May 1948

PA 8/49T104

KHRIMYAN, A.

35811. Issledovaniye spektra mass varitronov. (soobsheh) 1. -Avt: A. Alikhanyan
B. morozova khrinyan (I Dr.) Zhurnal eksperim. I teoret. Fiziki, 1949 vyp. 11,
S. 1021-56-Bibliogr: S. 1056

KHRIMYAN, A., ALIKHANYAN, A., MOROZOV, V., ETC.

SO: Letopis' Ahurnal'nykh Statey, Vol. 49, Moskva, 1949

KHRIMYAN, A.

Investigation of the Mass Spectrum of Varitrons.
I. A. Alikhanyan, V. Morozov, A. Khrimyan, G.
Muskhelishvili, and V. Kamalyan, Zhur. Eksptl. i
Teoret. Fiz. 19, 1021-56(1949)(in Russian). (See
also NSA 2-98, 2-1202, 2-1203, 3-1700.)

Using magnetic analysis, the mass spectrum of varitrons in cosmic radiation was investigated. Owing to a greater resolving power of the instrument, the varitron masses obtained are more accurate than those found in the authors' previous works (Doklady Akad. Nauk S.S.S.R. 58, 1321(1947); Zhur. Eksptl. i Teoret. Fiz. 18, 673 (1948)). The use of low-efficiency counters that recorded only a small percentage of relativistic particles permitted the determination of the ionizing power of varitrons absorbed in lead. The fact that the absorption in the filter is due to ionization losses proves the applicability of the method employed for the measuring of a particle's mass, viz., from its range and its momentum. The spectrum of momenta of the unfiltered radiation in the air shows significant irregularities, in the shape of narrow maxima and plateaus, corresponding to varitrons of different masses. The narrowness of the maxima indicates the short half-lifetime of some of the varitrons, which is much shorter than 10^{-6} sec. The spectra show important positive excesses: at 3,250 m altitude about 13% of all particles are fast protons; furthermore, there exists in air a great excess of positive varitrons heavier than the proton.

KHRIMIAN, A.

Vaisenberg, A., Morozov, V. and Khrimian, A. Remarks by V. A. Kravtsov on "The formula for the mass-spectrometer by Alikhanov and Alikhanian."

SO: Journal of Experimental and Theoretical Physics, Vol. 20, No. 11. November 1950.

KHRII.YAN, A.

PROTONS

Generation of protons by a neutral component in cosmic radiation. Dokl. AN SSSR.
35 Nol. 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

USSR/Nuclear Physics - Cosmic Rays 1 Jul 52

"Generation of Protons by the Neutral Component of Cosmic Radiation," A. Khrimyan, Phys Inst, Acad Sci Armenian SSR

"Dok Ak Nauk SSSR" Vol LXXXV, No 1, pp 75-78

In 1949 A. Alkhanyan, M. Deyon and V. Kharitonov showed that pos particles with mass close to that of the proton are created in a lead block under the action of neutral radiation, explaining the appearance of relatively fast protons as the result of recharging of the high-energy neutrons entering the compn of cosmic rays. Current article describes work devoted to the further study of this phenomenon under stricter

224791

conditions, using the large mass-spectrometer at the Alagez station (3,250 meters). Gives the dimensions of this instrument in 2 perpendicular plane-views. Submitted by Acad L. D. Landau 26 Apr 52.

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KHRIMYAN, A.

KHRIMYAN, A. V.

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4080
GENERATION OF PENETRATING PAIRS OF NEUTRAL
COMPONENTS OF COSMIC EMISSIONS. A. V. Khrimyan.
Doklady Akad. Nauk S.S.S.R. 94, 863-6(1954) Feb. 11.
(In Russian).

Nuclear Science Abstracts
July 1, 1954
Physics

The generation of penetrating pairs by the neutral components of cosmic radiation was investigated at 3250 m above sea level. The experimental setup is described in detail. A tabulation of the data shows that the impulse of the particle generating the pairs is $\sim 10^8$ ev/c. (J.S.R.)
(not)

9-21-54
RML

KHRIMYAN, A. V.

USSR/Physics - Fission Products

Card : 1/1

Authors : Khrimyan, A. V.

Title : Investigation of nuclear fission products generated by the neutral component of cosmic radiation

Periodical : Dokl. AN SSSR, 96, Ed. 6, 1155 - 1158, June 1954

Abstract : A magnetic spectrometer was successfully used in the study of products generated by stars and to determine their properties. The possibility of determining the sign of the charge allows one to analyze astral products of very high energies. π^- Mesons constitute no more than 5% of the single ray astral products generated by a neutral component. Particles heavier than a proton constitute no more than 10 - 20% of all generated particles with impulses greater than $9 \cdot 10^8$ ev/c. Eight references. Tables. graphs.

Institution : Acad. of S. Arm-SSR, Physics Institute

Presented by : Academician A. I. Alikhanov, April 26, 1954

KHRIMYAN, A. V.

Investigation of the products of nuclear ~~grinding~~ ^{irradiation} in lead by fast neutrons! A. V. Khrimyan, *Bull. Acad. Sci. U.S.S.R., Phys. Ser. G*, 638-43 (1966) (English translation).— See *C.A.* 50, 7617g. *P.M.R.* *sci* *nucl* *L*

one

KHRIMYAN, A.V.

Investigation of nuclear fission products induced by fast neutrons in lead. Izv. AN SSSR. Ser. fis. 19 no. 6: 700-706 M-D '55. (MLRA 9:4)

1. Fizicheskiy institut Akademii nauk Arm. SSR.
(Cosmic rays) (Nuclear physics)

Khrinyan, A.V.

USSR/Physics

Card 1/1 Pub. 22 - 15/45

Authors : Khrinyan, A. V.

Title : A ratio between positive and negative fast π -mesons formed during the
nucleous fissions

Periodical : Dok. AN SSSR 103/2, 229-232, Jul 11, 1955

Abstract : Data is presented on the positive and negative fast π -mesons originated in
stars formed by the neutral component of cosmic radiation in lead. Fifteen
references: 1 Cand., 1 Britl, 1 Jap., 2 USSR and 10 USA (1950-1954). Tables;
graphs.

Institution : The Acad. of Sc., USSR, Physical Institute

Presented by : Academician A. I. Alikhanov, April 19, 1955

Khrimyan, A.V.

✓6778 AEC-tr-2488

ON THE EXISTENCE OF PENETRATING PAIRS. A. V.

Khrimyan. Translated by V. Rimsky-Korsakoff from
Izvestiya Akad. Nauk S.S.S.R. 104, 393-6(1955). 11p.

In investigating products of nuclear spallation caused by the neutral component of cosmic radiation, the existence was verified of pairs of opposite charged particles at least one component of which was nuclear inactive. It was found that neutral radiation causes the generation of pairs of charged particles of opposite sign, at least one component of which cannot be either a π meson or a proton and the observed pairs cannot be the products of decay of neutral particles which disintegrate only into nuclear-active particles. (P. 6.)

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KHRIDYAN, A. V. :

KHRIDYAN, A. V. : "Investigation of the products of nuclear disintegration caused by the neutral components of cosmic rays in lead." Min Higher Education USSR. Moscow Engineering-Physics Inst. Moscow, 1956. (Dissertation For the Degree of Candidate in Physicomathematical Science.)

Knizhnays letopis'
No 32, 1956. Moscow.

KHRIMYAN, A. V.

RESEARCH INTO THE NATURE AND SPECTRA OF PARTICLES PRODUCED BY
HIGH ENERGY NUCLEONS

A. I. Alikhanov, A. V. Khrimyan, V. K. Kosmachevsky,
V. L. Avakyan, K. S. Egiyan, Yu. P. Korotkov, N. A.
Nalbandyan

The nature and the momentum spectra of secondary particles produced in lead by fast cosmic nucleons were studied at an altitude of 3,250 m. above sea level by means of a magnetic mass-spectrometer, five-layer proportional counter and five-layer scintillation counter.

The momentum spectra of π^- -mesons, K-mesons, protons and neutrons, generated by the charged and neutral components of cosmic radiation, are presented.

The spectra of π^\pm -mesons produced by neutrons do not differ from the spectra of π^\pm -mesons produced by fast charged particles. The N^+/N^- ratio for π^- -mesons generated by protons differs from that for π^- -mesons generated by neutrons.

Among the products of stars with momenta up to 720 Mev/c, the number of K-mesons is of the order of 10% of the π^- -mesons. In the 720 - 1,000 Mev/c range, $N_K/N_\pi > 0.2$.

In the momentum range up to 1,000 Mev/c, an increase in the number of k-mesons is observed with increase in momentum. An evaluation of the σ_n/σ_p ratio was undertaken where σ_n , σ_p are the cross sections of K-meson production by neutrons and protons.

In the momentum range up to 1,000 Mev/c, an increase in the number of K-mesons is observed with increase in momentum. An evaluation of the $\frac{\sigma_n}{\sigma_p}$ ratio was undertaken where σ_n , σ_p are the cross sections of K-meson production neutrons and protons.

Data are presented on the number of neutrons and protons of different energies in cosmic radiation flux at an altitude of 3,250 metres above sea level.

Report presented at the International Cosmic Ray Conference, Moscow, 6-11 July 1959.

24(7)

AUTHORS:

Alikhanov, A. I., Yeliseyev, G. P., SOV/56-36-2-9/63
Kamalyan, V. Sh., Lyubimov, V. A., Moiseyev, B. N., Khrimyan, A.V.

TITLE:

Investigation of the Nature and the Spectra of Particles
Produced by High Energy Nucleons (Issledovaniye prirody i
spektrov chastits, generirovannykh nuklonami vysokoy energii)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 36, Nr 2, pp 404-410 (USSR)

ABSTRACT:

In the present paper the authors publish the results obtained by the investigation of particles which were produced by high-energy nucleons of cosmic radiation at an altitude of 3200 m above sea level. Investigations were carried out on Mount Aragats in Armenia. The experimental device used is shown by figure 1 in form of 2 sections which are vertical to each other. The device, in principle, consists of a mass spectrometer (6850 Oe), an additional hodoscope arrangement, and a five-layer thin-walled proportionality counter. Two series of measurements were carried out: with generators (10 and 25 cm lead) and control tests "without generators" (0.3 - 2 cm lead total substance thickness). Measuring results can be divided into 2 groups:
a) particles produced in the generators by neutral radiation,

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b) particles of stars produced by charged particles and single charged particles. Muons were excluded by means of the momentum-range method. Figures 1a,b show the results of momentum- and ionization measurements of secondary particles under 25 cm of lead of groups a) and b). Sufficient data could be obtained from the experimental material concerning secondary protons and partly also concerning deuterons. In 2 series of measurements carried out in the momentum range of 400-900 Mev/c 35 deuterons were observed, 10 of which had been produced by protons. Thus, cosmic radiation in an altitude of 3250 m had 3.5 times as many neutrons as protons. The momentum spectrum of deuterons in the "generatorless" tests with momenta >800 Mev/c had the form $N(p) \sim p^{-\gamma}$, ($\gamma \approx 2$). Figure 3 shows the differential momentum spectrum of π^- -mesons which had been produced by neutrons, viz. measurements of shower-mesons and of single mesons (momenta: 400 - 7000 Mev/c); the course corresponds to $N(p) \sim p^{-\gamma}$, where γ for the shower 1.7 for single π^- -mesons is equal to 2.4. Khrimyan and Asatiani (Ref 4) found $\gamma = 1.5$ for the π^- -meson spectrum (shower), but they investigated the π^- -meson production by protons.

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In the momentum range of 125-700 Mev/c the mean value 89/45 was obtained for N_{π^-}/N_{π^+} as a result of neutron action, and for stars produced by protons $N_{\pi^-}/N_{\pi^+} = 45/54$ was obtained. In figure 2 the mass distribution of the recorded particles is represented in the momentum range of 125-720 Mev/c (ionization 1.3 - 7I_{min}) separately for single particles produced by neutrons and for multiple stars produced by neutrons. Particles with a mass 700-1300 m_e were determined as amounting to 10% (measured according to the proton number). As regards the K-mesons determined, it may be seen from table 1, which gives a detailed account of all measuring results, that $N_{K^+}/N_{K^-} = 16/3$, and that in consideration of the producing particles, it holds that $N_{K^+}(p)/N_{K^+}(n) = 14/5$. Finally, a large number of investigation results concerning π^- and K-mesons in the momentum range of 720-900 Mev/c is given. The authors in conclusion thank Professor A. I. Alikhanyan for his interest and discussions,

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and the Spectra of Particles Produced by High Energy Nucleons

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and they express their gratitude to V. K. Kosmachevskiy,
I. P. Karabekyan, V. P. Kanavets and V. V. Avakyan for their
great help in organizing and carrying out the work.
There are 4 figures, 2 tables, and 6 references, 4 of which are
Soviet.

SUBMITTED: August 20, 1958

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S/058/61/000/010/021/100
A001/A101

AUTHORS: Khrimyan, A.V., Kosmachevskiy, V.K., Avakyan, V.V., Gorodkov, Yu.V.,
Yegikyan, K.Sh., Nalbandyan, N.A.

TITLE: Investigation of the nature and spectra of particles produced by
high-energy nucleons

PERIODICAL: Referativnyy zhurnal. Fizika, no. 10, 1961, 97, abstract 10B507 ("Tr.
Mezhdunar. konferentsii po kosmich. lucham, 1959, v. 1", Moscow, AN
SSSR, 1960, 183 - 187)

TEXT: The authors present the results of investigating particles with mo-
menta up to 900 Mev/c produced in lead by high-energy nucleons of cosmic radia-
tion at an altitude of 3,200 m above sea level (the Aragats mountain, Armenia).
The ionizing capability of individual particles was determined with an average
accuracy of $\pm 14\%$ by means of a gas counter and of $\pm 10\%$ by means of five scintil-
lation counters.

L. Dorman

[Abstracter's note: Complete translation]

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KHRIMYAN, A. V., AVAKYAN, V. V., NALBANDYAN, N. A., EGYAN, K. SH.,

PLESHKO, M. P., ~~Asatiani, T. L.~~

"The Composition of the Flux of the Cosmic Ray Nuclear-Active
Particles of Momenta Higher than 1.8 Gev/c at the Altitude of
3250 m Above Sea Level."

report submitted for the Intl. Conf. on Cosmic Rays and Earth Storm (IUPAP)
Kyoto, Japan 4-15 Sept. 1961.

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S/120/61/000/006/007/041

E032/E114

21.6000

AUTHORS: Khrimyan, A.V., Yegiyany, K.Sh., Nalbandyan, N.A.,
Avakyan, V.V., and Karapetyan, V.A.

TITLE: Measurement of charged-particle masses with the aid
of scintillation counters

PERIODICAL: Pribery i tekhnika eksperimenta, no.6, 1961, 52-56

TEXT: The method can be used to (a) select particles which
stop in the scintillator owing to ionization losses, and
(b) to determine the mass of the particles by measuring their
energy and range in the scintillator. The device consists of a
telescope of n scintillation counters (C_1, \dots, C_n) with
thickness l_1, \dots, l_n respectively. If a particle which has
passed at an angle of φ through $k - 1$ scintillators has come
to rest in the scintillator C_k at a depth l_x , and at the end
of its range in the $m + 1$ scintillators C_{k-m}, \dots, C_k the
energy losses $\Delta E_{k-m}, \dots, \Delta E_k$ were due to ionization only, then
it can be shown that:

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$$\frac{\Delta E_{k-i}}{\Delta E_{k-(i+1)}} = f_i \left(\frac{\Delta E_{k-(i+1)}}{\Delta E_{k-(i+2)}}, l_{k-1}, \dots, l_{k-(i+2)} \right) \quad (1)$$

(i = 0, ..., m - 2)

This holds whatever the nature of the particle, the direction of its motion, and range in the last scintillator C_k . Thus, by measuring the energies $\Delta \mathcal{E}_1, \dots, \Delta \mathcal{E}_n$ in the scintillators C_1, \dots, C_n one can select with the aid of Eq.(1) all those particles which come to rest in the scintillators C_{k-m}, \dots, C_k by losing energy in ionization processes only.

For stable particles $\Delta \mathcal{E}_i = \Delta E_i$. If on the other hand a primary particle decays (or is captured) in the scintillator C_k then the energy liberated in C_k is $\Delta \mathcal{E}_k = \Delta E_k + \delta E_k$ where the latter quantity is the energy of the secondary particles. In this case the first equation (i = 0) in Eq.(1) can only be used for the determination of the unknown energy:

$$\Delta E_k = \Delta \mathcal{E}_{k-1} f_0 (\Delta \mathcal{E}_{k-1} / \Delta \mathcal{E}_{k-2}) \quad (4)$$

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and the remaining relations in Eq.(1) are used to select the ionization stoppages. The energy loss of a particle with an ionizing power I/I_{min} in the scintillator C_i is given by:

$$\Delta \epsilon_i = B (I/I_{min}) C_i \ell_i \text{ MeV} \quad (5)$$

where B is in MeV/cm and represents the minimum ionization loss in the particular scintillator, and ℓ_i is the thickness of the scintillator C_i in cm. Thus the energy lost by a particle before stopping in scintillators C_{k-m}, \dots, C_k is given by

$$E = \sum_{i=k}^{k-m} \Delta \epsilon_i$$

If Eq.(1) is not satisfied for $i = 0$, then

$$E = \sum_{i=k-1}^{k-m} \Delta \epsilon_i + \Delta E_k \quad (6)$$

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where ΔE_k is given by Eq. (4). The range of a particle in the scintillators C_{k-m}, \dots, C_k is given by:

$$R = \left(\sum_{i=k-1}^{k-m} \ell_i + \ell_x \right) \operatorname{cosec} \varphi \quad (7)$$

in which all the quantities except ℓ_x are known. If the scintillators are looked upon as simple filters then

$$\ell_x = 1/2 \ell_k \pm 1/2 \ell_k.$$

ℓ_x can also be determined from a relation of the form:

$$\ell_x = F(f_0, \ell_{k-1}, \ell_{k-2}) \quad (3)$$

In order to verify the above method the authors have used the results obtained with the instrument described by A.I. Alikhanov, A.V. Khrimyan, V.K. Kosmachevskiy, V.V. Avakyan, Yu.V. Gorodkov, K.Sh. Yegiyanyan and N.A. Nalbandyan (Ref.6: Proceedings of the International Conference on Cosmic Rays, 1959, 1960, v.1., 183)

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The instrument consists of a magnetic mass spectrometer, a five-layer proportional counter (A.I. Alikhanov, V.A. Lubimov, G.P. Elisiyev, CERN Symposium, v.2, 1956, 87) and five scintillation counters (V.K. Kosmachevskiy and M.S. Aynuddinov, PTE, no.3, 1956, 49). The rms error in the momenta between 0.2 and 1 GeV/c was approximately 8 to 5% for protons and 2 to 4% for π -mesons. The ionizing power of the particles could be measured with the proportional counter to an average accuracy of $\pm 14\%$. For particles stopping in the scintillation counters the average losses in the scintillators could be measured to $\pm 10\%$. Preliminary results indicate that the efficiency of selection of particles which come to rest owing to ionization only is about 0.8. The average accuracy with which the masses can be determined from the energies and ranges is approximately 20%. The statistics on which these results are based are limited and therefore the results are only preliminary. The experiment did not confirm the possibility of investigating the masses and decays of unstable particles. The method may find wide-ranging applications and is amenable to automation. Acknowledgments are

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Measurement of charged-particle ...

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E032/E114

expressed to A.I. Alikhanov and A.I. Alikhanyan for interest and discussions, and to Yu.V. Gorodkov, M.P. Lorikyan, I.P. Karabekov, K.A. Khurshudyan, G.P. Matevosyan, V.V. Truzyan, E.V. Patvakanyan, G.M. Smsaryan, A.A. Oganesyanyan and B.V. Tovmasyan for assistance in the organisation and execution of this work.

There are 4 figures and 11 references: 5 Soviet-bloc and 6 non-Soviet-bloc. The four most recent English language references read as follows:

Ref.2: J.W. Keuffel, R.L. Call, W.H. Sandmann, M.O. Larson.
Phys. Rev. Letters, v.1, 1958, 203.

Ref.4: Phys. Rev., v.114, 1959, 1150.

Ref.5: E. Birman, R. Lea, J. Orear, S. Rosendorff.
Phys. Rev., v.113, 1959, 710.

Ref.7: J. Steinberger, 1958 Annual International Conference on High Energy Physics at CERN, Geneva, 1958.

ASSOCIATION: Fizicheskiy institut AN ArmSSR
(Physics Institute, AS Armenian SSR)

SUBMITTED: April 3, 1961
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S/048/62/026/006/005/020
B125/B112

AUTHORS: ~~Khrimyan, A. V., Avakyan, V. V., Nalbandyan, N. A.,~~
Yeghyan, K. Sh., and Pleshko, M. P.

TITLE: Composition of the nuclear active cosmic radiation particle
current in the momentum range exceeding 1.8 Bev/c at
3250 m above sea level. I.

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26,
no. 6, 1962, 722 - 727

TEXT: The relative number of pions present in the current of nuclear
active cosmic radiation particles was determined for momenta above 1.8 Bev,
at an altitude of 3250 m on the Aragats mountain in Armenia. A magnetic
mass spectrometer (6850 oe) was used, the measuring apparatus comprising
also a five-layer gas proportional counter and five scintillation
counters. The electrons, the muons, and the particles produced in the
measuring apparatus itself were screened out. The first series of
measurements recorded mainly the particles absorbed by the filters and
their secondary products. In the second series all particles were re-
corded. At $p = 1.8$ Bev, 65 positively charged particles were recorded,
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